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*Mathematical Methods for Physicists* - George B. Arfken 2012-01-17

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Determinants and Matrices Vector Analysis  
Tensors and Differential Forms Vector Spaces  
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Functions Complex Variable Theory Further  
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Functions Legendre Functions Angular  
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Functions Fourier Series Integral Transforms  
Periodic Systems Integral Equations Mathieu  
Functions Calculus of Variations Probability and

Statistics.

**A Friendly Introduction to Mathematical Logic** - Christopher C. Leary 2015

At the intersection of mathematics, computer science, and philosophy, mathematical logic examines the power and limitations of formal mathematical thinking. In this expansion of Leary's user-friendly 1st edition, readers with no previous study in the field are introduced to the basics of model theory, proof theory, and computability theory. The text is designed to be used either in an upper division undergraduate classroom, or for self study. Updating the 1st Edition's treatment of languages, structures, and deductions, leading to rigorous proofs of Gödel's First and Second Incompleteness Theorems, the expanded 2nd Edition includes a new introduction to incompleteness through computability as well as solutions to selected exercises.

*Introduction to Applied Linear Algebra* - Stephen Boyd 2018-06-07

A groundbreaking introduction to vectors, matrices, and least squares for engineering applications, offering a wealth of practical examples.

**Oxford, Cambridge, and Dublin Messenger of Mathematics** - 1866

**Polymer Solutions** - Iwao Teraoka 2004-04-07  
Polymer Solutions: An Introduction to Physical Properties offers a fresh, inclusive approach to teaching the fundamentals of physical polymer science. Students, instructors, and professionals in polymer chemistry, analytical chemistry, organic chemistry, engineering, materials, and textiles will find Iwao Teraoka's text at once accessible and highly detailed in its treatment of the properties of polymers in the solution phase. Teraoka's purpose in writing Polymer Solutions is twofold: to familiarize the advanced undergraduate and beginning graduate student with basic concepts, theories, models, and experimental techniques for polymer solutions;

and to provide a reference for researchers working in the area of polymer solutions as well as those in charge of chromatographic characterization of polymers. The author's incorporation of recent advances in the instrumentation of size-exclusion chromatography, the method by which polymers are analyzed, renders the text particularly topical. Subjects discussed include: Real, ideal, Gaussian, semirigid, and branched polymer chains Polymer solutions and thermodynamics Static light scattering of a polymer solution Dynamic light scattering and diffusion of polymers Dynamics of dilute and semidilute polymer solutions Study questions at the end of each chapter not only provide students with the opportunity to test their understanding, but also introduce topics relevant to polymer solutions not included in the main text. With over 250 geometrical model diagrams, Polymer Solutions is a necessary reference for students and for scientists pursuing a broader understanding of

polymers.

*Mathematics for Computer Science* - Eric Lehman 2017-03-08

This book covers elementary discrete mathematics for computer science and engineering. It emphasizes mathematical definitions and proofs as well as applicable methods. Topics include formal logic notation, proof methods; induction, well-ordering; sets, relations; elementary graph theory; integer congruences; asymptotic notation and growth of functions; permutations and combinations, counting principles; discrete probability. Further selected topics may also be covered, such as recursive definition and structural induction; state machines and invariants; recurrences; generating functions.

**Topics in the Theory of Numbers** - Janos Suranyi 2003-01-14

Number theory, the branch of mathematics that studies the properties of the integers, is a repository of interesting and quite varied

problems, sometimes impossibly difficult ones. In this book, the authors have gathered together a collection of problems from various topics in number theory that they find beautiful, intriguing, and from a certain point of view instructive.

**Algebraic Combinatorics** - Richard P. Stanley  
2013-06-17

Written by one of the foremost experts in the field, Algebraic Combinatorics is a unique undergraduate textbook that will prepare the next generation of pure and applied mathematicians. The combination of the author's extensive knowledge of combinatorics and classical and practical tools from algebra will inspire motivated students to delve deeply into the fascinating interplay between algebra and combinatorics. Readers will be able to apply their newfound knowledge to mathematical, engineering, and business models. The text is primarily intended for use in a one-semester advanced undergraduate course in algebraic

combinatorics, enumerative combinatorics, or graph theory. Prerequisites include a basic knowledge of linear algebra over a field, existence of finite fields, and group theory. The topics in each chapter build on one another and include extensive problem sets as well as hints to selected exercises. Key topics include walks on graphs, cubes and the Radon transform, the Matrix-Tree Theorem, and the Sperner property. There are also three appendices on purely enumerative aspects of combinatorics related to the chapter material: the RSK algorithm, plane partitions, and the enumeration of labeled trees. Richard Stanley is currently professor of Applied Mathematics at the Massachusetts Institute of Technology. Stanley has received several awards including the George Polya Prize in applied combinatorics, the Guggenheim Fellowship, and the Leroy P. Steele Prize for mathematical exposition. Also by the author: Combinatorics and Commutative Algebra, Second Edition, © Birkhauser.

## Australian Books in Print - 1991

### **The Art of Mathematics - Take Two** - Béla Bollobás 2022-06-30

Lovers of mathematics, young and old, professional and amateur, will enjoy this book. It is mathematics with fun: a collection of attractive problems that will delight and test readers. Many of the problems are drawn from the large number that have entertained and challenged students, guests and colleagues over the years during afternoon tea. The problems have their roots in many areas of mathematics. They vary greatly in difficulty: some are very easy, but most are far from trivial, and quite a few rather hard. Many provide substantial and surprising results that form the tip of an iceberg, providing an introduction to an important topic. To enjoy and appreciate the problems, readers should browse the book choosing one that looks particularly enticing, and think about it on and off for a while before resorting to the hint or the



solution. Follow threads for an enjoyable and enriching journey through mathematics. *Proceedings of the London Mathematical Society* - London Mathematical Society 1904

"Papers presented to J. E. Littlewood on his 80th birthday" issued as 3d ser., v. 14 A, 1965.

*CRC Concise Encyclopedia of Mathematics* - Eric W. Weisstein 2002-12-12

Upon publication, the first edition of the CRC Concise Encyclopedia of Mathematics received overwhelming accolades for its unparalleled scope, readability, and utility. It soon took its place among the top selling books in the history of Chapman & Hall/CRC, and its popularity continues unabated. Yet also unabated has been the d

[New Syllabus Mathematics Workbook 3](#) - Dr Joseph Yeo 2007-01-01

New Syllabus Mathematics Workbook (Express) is written in line with the new Singapore-Cambridge GCE O Level Examination and the new initiatives of the Ministry of Education.

The workbook consists of exercises which prepare students for their examinations. The more difficult questions are marked with an \*. To encourage student-centred learning, the workbook includes non-routine types of worksheets that are classified under the section, Alternative Assessment. These worksheets encourage students to learn independently through carefully-guided steps and the use of IT. Students are motivated to investigate mathematical concepts with various methods and think critically, so that they will understand and appreciate the concepts better. The teacher can gauge the students' learning by assessing the work with the scoring rubric found at the end of the relevant worksheets. The workbook is accompanied with a CD-ROM that contains templates to be used with some worksheets. It is hoped that with the use of various pedagogies, different types of students will be inspired to achieve success in mathematics.

Task Design In Mathematics Education - Anne

Watson 2015-10-26

\*THIS BOOK IS AVAILABLE AS OPEN ACCESS BOOK ON SPRINGERLINK\* This open access book is the product of ICMI Study 22 Task Design in Mathematics Education. The study offers a state-of-the-art summary of relevant research and goes beyond that to develop new insights and new areas of knowledge and study about task design. The authors represent a wide range of countries and cultures and are leading researchers, teachers and designers. In particular, the authors develop explicit understandings of the opportunities and difficulties involved in designing and implementing tasks and of the interfaces between the teaching, researching and designing roles - recognising that these might be undertaken by the same person or by completely separate teams. Tasks generate the activity through which learners meet mathematical concepts, ideas, strategies and learn to use and develop mathematical thinking

and modes of enquiry. Teaching includes the selection, modification, design, sequencing, installation, observation and evaluation of tasks. The book illustrates how task design is core to effective teaching, whether the task is a complex, extended, investigation or a small part of a lesson; whether it is part of a curriculum system, such as a textbook, or promotes free standing activity; whether the task comes from published source or is devised by the teacher or the student.

American Book Publishing Record Cumulative, 1950-1977 - R.R. Bowker Company. Department of Bibliography 1978

Partial Differential Equations - Walter A. Strauss  
2007-12-21

Partial Differential Equations presents a balanced and comprehensive introduction to the concepts and techniques required to solve problems containing unknown functions of multiple variables. While focusing on the three

most classical partial differential equations (PDEs)—the wave, heat, and Laplace equations—this detailed text also presents a broad practical perspective that merges mathematical concepts with real-world application in diverse areas including molecular structure, photon and electron interactions, radiation of electromagnetic waves, vibrations of a solid, and many more. Rigorous pedagogical tools aid in student comprehension; advanced topics are introduced frequently, with minimal technical jargon, and a wealth of exercises reinforce vital skills and invite additional self-study. Topics are presented in a logical progression, with major concepts such as wave propagation, heat and diffusion, electrostatics, and quantum mechanics placed in contexts familiar to students of various fields in science and engineering. By understanding the properties and applications of PDEs, students will be equipped to better analyze and interpret central processes of the natural world.

## **Applied Stochastic Differential Equations -**

Simo Särkkä 2019-05-02

With this hands-on introduction readers will learn what SDEs are all about and how they should use them in practice.

Introduction to Representation Theory - Pavel I. Etingof 2011

Very roughly speaking, representation theory studies symmetry in linear spaces. It is a beautiful mathematical subject which has many applications, ranging from number theory and combinatorics to geometry, probability theory, quantum mechanics, and quantum field theory. The goal of this book is to give a ``holistic'' introduction to representation theory, presenting it as a unified subject which studies representations of associative algebras and treating the representation theories of groups, Lie algebras, and quivers as special cases. Using this approach, the book covers a number of standard topics in the representation theories of these structures. Theoretical material in the

book is supplemented by many problems and exercises which touch upon a lot of additional topics; the more difficult exercises are provided with hints. The book is designed as a textbook for advanced undergraduate and beginning graduate students. It should be accessible to students with a strong background in linear algebra and a basic knowledge of abstract algebra.

Encyclopaedia of Mathematics - M. Hazewinkel 2013-12-01

Mathematical Wizardry for a Gardner - Ed Pegg Jr 2009-04-20

In this volume, world-leading puzzle designers, puzzle collectors, mathematicians, and magicians continue the tradition of honoring Martin Gardner, who inspired them to enter mathematics, to enter magic, to bring magic into their mathematics, or to bring mathematics into their magic. This edited collection contains a variety of articles connected t



New Syllabus Mathematics - Joseph B. W. Yeo  
2014

**How to Think Like a Mathematician** - Kevin  
Houston 2009-02-12

This arsenal of tips and techniques eases new students into undergraduate mathematics, unlocking the world of definitions, theorems, and proofs.

Introduction to Algebra - Peter Jephson Cameron  
1998

This book is an undergraduate textbook on abstract algebra, beginning with the theories of rings and groups. As this is the first really abstract material students need, the pace here is gentle, and the basic concepts of subring, homomorphism, ideal, etc are developed in detail. Later, as students gain confidence with abstractions, they are led to further developments in group and ring theory (simple groups and extensions, Noetherian rings, and outline of universal algebra, lattices and

categories) and to applications such as Galois theory and coding theory. There is also a chapter outlining the construction of the number systems from scratch and proving in three different ways that transcendental numbers exist.

New Syllabus Mathematics Workbook 4 - Dr  
Joseph Yeo 2008-01-01

New Syllabus Mathematics Workbook (Express) is written in line with the new Singapore-Cambridge GCE  $\diamond O \diamond$  Level Examination and the new initiatives of the Ministry of Education. The workbook consists of exercises which prepare students for their examinations. The more difficult questions are marked with an \*. To encourage student-centred learning, the workbook includes non-routine types of worksheets that are classified under the section, Alternative Assessment. These worksheets encourage students to learn independently through carefully-guided steps and the use of IT. Students are motivated to investigate mathematical concepts with various methods

and think critically, so that they will understand and appreciate the concepts better. The teacher can gauge the students' learning by assessing the work with the scoring rubric found at the end of the relevant worksheets. The workbook is accompanied with a CD-ROM that contains templates to be used with some worksheets. It is hoped that with the use of various pedagogies, different types of students will be inspired to achieve success in mathematics.

**Engineering Mathematics-II** - A. Ganeshi 2009

About the Book: This book Engineering Mathematics-II is designed as a self-contained, comprehensive classroom text for the second semester B.E. Classes of Visveswaraiah Technological University as per the Revised new Syllabus. The topics included are Differential Calculus, Integral Calculus and Vector Integration, Differential Equations and Laplace Transforms. The book is written in a simple way and is accompanied with explanatory figures. All

this make the students enjoy the subject while they learn. Inclusion of selected exercises and problems make the book educational in nature. It should.

**Model Answers in Pure Mathematics for A-level Students** - Gerald Alfred Pratt 1966

Combinatorics and Physics - Kurusch Ebrahimi-Fard 2011

This book is based on the mini-workshop Renormalization, held in December 2006, and the conference Combinatorics and Physics, held in March 2007. Both meetings took place at the Max-Planck-Institut für Mathematik in Bonn, Germany. Research papers in the volume provide an overview of applications of combinatorics to various problems, such as applications to Hopf algebras, techniques to renormalization problems in quantum field theory, as well as combinatorial problems appearing in the context of the numerical integration of dynamical systems, in

noncommutative geometry and in quantum gravity. In addition, it contains several introductory notes on renormalization Hopf algebras, Wilsonian renormalization and motives.

**Mathematics and Computation** - Avi Wigderson 2019-10-29

An introduction to computational complexity theory, its connections and interactions with mathematics, and its central role in the natural and social sciences, technology, and philosophy. Mathematics and Computation provides a broad, conceptual overview of computational complexity theory—the mathematical study of efficient computation. With important practical applications to computer science and industry, computational complexity theory has evolved into a highly interdisciplinary field, with strong links to most mathematical areas and to a growing number of scientific endeavors. Avi Wigderson takes a sweeping survey of complexity theory, emphasizing the field's

insights and challenges. He explains the ideas and motivations leading to key models, notions, and results. In particular, he looks at algorithms and complexity, computations and proofs, randomness and interaction, quantum and arithmetic computation, and cryptography and learning, all as parts of a cohesive whole with numerous cross-influences. Wigderson illustrates the immense breadth of the field, its beauty and richness, and its diverse and growing interactions with other areas of mathematics. He ends with a comprehensive look at the theory of computation, its methodology and aspirations, and the unique and fundamental ways in which it has shaped and will further shape science, technology, and society. For further reading, an extensive bibliography is provided for all topics covered. Mathematics and Computation is useful for undergraduate and graduate students in mathematics, computer science, and related fields, as well as researchers and teachers in these fields. Many parts require little

background, and serve as an invitation to newcomers seeking an introduction to the theory of computation. Comprehensive coverage of computational complexity theory, and beyond High-level, intuitive exposition, which brings conceptual clarity to this central and dynamic scientific discipline Historical accounts of the evolution and motivations of central concepts and models A broad view of the theory of computation's influence on science, technology, and society Extensive bibliography  
*Bibliography of Scientific and Industrial Reports* - 1968-04

*Solving Systems of Polynomial Equations* - Bernd Sturmfels 2002

A classic problem in mathematics is solving systems of polynomial equations in several unknowns. Today, polynomial models are ubiquitous and widely used across the sciences. They arise in robotics, coding theory, optimization, mathematical biology, computer

vision, game theory, statistics, and numerous other areas. This book furnishes a bridge across mathematical disciplines and exposes many facets of systems of polynomial equations. It covers a wide spectrum of mathematical techniques and algorithms, both symbolic and numerical. The set of solutions to a system of polynomial equations is an algebraic variety - the basic object of algebraic geometry. The algorithmic study of algebraic varieties is the central theme of computational algebraic geometry. Exciting recent developments in computer software for geometric calculations have revolutionized the field. Formerly inaccessible problems are now tractable, providing fertile ground for experimentation and conjecture. The first half of the book gives a snapshot of the state of the art of the topic. Familiar themes are covered in the first five chapters, including polynomials in one variable, Grobner bases of zero-dimensional ideals, Newton polytopes and Bernstein's Theorem,

multidimensional resultants, and primary decomposition. The second half of the book explores polynomial equations from a variety of novel and unexpected angles. It introduces interdisciplinary connections, discusses highlights of current research, and outlines possible future algorithms. Topics include computation of Nash equilibria in game theory, semidefinite programming and the real Nullstellensatz, the algebraic geometry of statistical models, the piecewise-linear geometry of valuations and amoebas, and the Ehrenpreis-Palamodov theorem on linear partial differential equations with constant coefficients. Throughout the text, there are many hands-on examples and exercises, including short but complete sessions in MapleR, MATLABR, Macaulay 2, Singular, PHCPack, CoCoA, and SOSTools software. These examples will be particularly useful for readers with no background in algebraic geometry or commutative algebra. Within minutes, readers can learn how to type in polynomial equations

and actually see some meaningful results on their computer screens. Prerequisites include basic abstract and computational algebra. The book is designed as a text for a graduate course in computational algebra.

**New General Mathematics for Junior Secondary Schools** - Murray Macrae

2008-06-03

This well-established series, the most popular in Nigeria, has been fully revised to reflect recent developments in mathematics education at junior secondary level and the views of the many users of the books. It has especially been revised to fully cover the requirements of the new NERDC Universal Basic Education Curriculum.

*Basic Mathematics for Economists* - Mike Rosser  
2003-12-08

Economics students will welcome the new edition of this excellent textbook. Mathematics is an integral part of economics and understanding basic concepts is vital. Many students come into economics courses without having studied

mathematics for a number of years. This clearly written book will help to develop quantitative skills in even the least numerate student up to the required level for a general Economics or Business Studies course. This second edition features new sections on subjects such as: matrix algebra part year investment financial mathematics Improved pedagogical features, such as learning objectives and end of chapter questions, along with the use of Microsoft Excel and the overall example-led style of the book means that it will be a sure fire hit with both students and their lecturers.

### **Edexcel Linear** - 2010-04-19

Collins New GCSE Maths Edexcel Linear Teacher's Pack Higher 1 contains everything you need to deliver effective lessons in mathematics with confidence for students working at Grades D to A\*. Fully matched to Edexcel's new GCSE Maths Linear specification, these teacher resources offer well-differentiated lesson plans and additional support. The Teacher's Pack

allows you to: \* Capture the essence of chapters at a glance with chapter overviews \* Easily access learning objectives and references to exam board specifications, KS4 Programme of Study, Functional Skills Standards and Personal Learning and Thinking Skills (PLTS) for each chapter \* Link maths concepts and help students to access functional and problem-solving scenarios \* Raise standards by providing the right level of progression for every student by using the well-differentiated lesson plans \* Involve the whole class in engaging activities and discussions using the Starter \* Lead students into the main concepts and exercises with the Main Lesson Activity \* Consolidate and summarise learning using the Plenary \* Quickly access the answers to all questions in the corresponding Student Book and Homework Book \* Plan ahead and save time using the ready-made Scheme of Work \* Customise your lessons using Lesson Plans in Word format on the CD-Rom

### Essential Mathematics and Statistics for Science

- Dr. Graham Currell 2005-10-21

Basic Mathematics and Statistics for Science is a low-level introduction to the essential techniques students need to understand. It assumes little prior knowledge, and adopts a gentle approach that leads through examples in the book and website. No other text provides this range of educational support for science students. The integration between book and website provides study options that would be impossible through a book alone, and allows students to study in ways that suit their own circumstances and preferences. The combination of book and website also provides ready-prepared material for lectures, tutorials and computer practicals. Tutors can use the material to develop a variety of coherent programme using different learning styles. The book develops the mathematics and statistics through examples and questions that reflect the scientific context, and has succeeded in being relevant to a range of undergraduate

science programmes.

**New Syllabus Mathematics Textbook 3** - Teh Keng Seng 2007-01-01

New Syllabus Mathematics is a series of four books. These books follow the Mathematics Syllabus for Secondary Schools, implemented from 2007 by the Ministry of Education, Singapore. The whole series covers the complete syllabus for the Singapore-Cambridge GCE  $\diamond O \diamond$  Level Mathematics. The sixth edition of New Syllabus Mathematics retains the goals and objectives of the previous edition, but has been revised to meet the needs of the current users, to keep materials up-to-date as well as to give students a better understanding of the contents. All topics are comprehensively dealt with to provide students with a firm grounding in the subject. Explanations of concepts and principles are precise and written clearly and concisely with supportive illustrations and examples. Examples and exercises have been carefully graded to aid students in progressing within and

beyond each level. Those exercises marked with a require either more thinking or involve more calculations. Numerous revision exercises are provided at appropriate intervals to enable students to recapitulate what they have learnt. Some interesting features of this series include the following: ♦ an interesting introduction at the beginning of each chapter complete with photographs or graphics ♦ brief specific instructional objectives for each chapter ♦ Just For Fun arouses the students' interests in studying mathematics ♦ Thinking Time encourages students to think creatively and go deeper into the topics ♦ Exploration provides opportunities for students to learn actively and independently ♦ For Your Information provides extra information on mathematicians, mathematical history and events etc. ♦ Problem Solving Tips provides suggestions to help students in their thinking processes. We also introduce problem solving heuristics and strategies systemically throughout the series. ♦

Your Attention alerts students to misconceptions.

**American Book Publishing Record** - 1992

**Old and New Unsolved Problems in Plane Geometry and Number Theory** - Victor Klee  
2020-07-31

Victor Klee and Stan Wagon discuss some of the unsolved problems in number theory and geometry, many of which can be understood by readers with a very modest mathematical background. The presentation is organized around 24 central problems, many of which are accompanied by other, related problems. The authors place each problem in its historical and mathematical context, and the discussion is at the level of undergraduate mathematics. Each problem section is presented in two parts. The first gives an elementary overview discussing the history and both the solved and unsolved variants of the problem. The second part contains more details, including a few proofs of



related results, a wider and deeper survey of what is known about the problem and its relatives, and a large collection of references. Both parts contain exercises, with solutions. The book is aimed at both teachers and students of mathematics who want to know more about famous unsolved problems.

*Introduction to Probability* - Dimitri P. Bertsekas  
2002

[Applications of Diophantine Approximation to Integral Points and Transcendence](#) - Pietro Corvaja  
2018-04-30

This introduction to the theory of Diophantine approximation pays special regard to Schmidt's subspace theorem and to its applications to Diophantine equations and related topics. The geometric viewpoint on Diophantine equations has been adopted throughout the book. It includes a number of results, some published here for the first time in book form, and some new, as well as classical material presented in

an accessible way. Graduate students and experts alike will find the book's broad approach useful for their work, and will discover new techniques and open questions to guide their research. It contains concrete examples and many exercises (ranging from the relatively simple to the much more complex), making it ideal for self-study and enabling readers to quickly grasp the essential concepts.

**Linear Algebra and Its Applications, Global Edition** - David C. Lay  
2015-06-03

NOTE: Before purchasing, check with your instructor to ensure you select the correct ISBN. Several versions of Pearson's MyLab & Mastering products exist for each title, and registrations are not transferable. To register for and use Pearson's MyLab & Mastering products, you may also need a Course ID, which your instructor will provide. Used books, rentals, and purchases made outside of PearsonIf purchasing or renting from companies other than Pearson, the access codes for Pearson's MyLab &

Mastering products may not be included, may be incorrect, or may be previously redeemed. Check with the seller before completing your purchase. Note: You are purchasing a standalone product; MyMathLab does not come packaged with this content. MyMathLab is not a self-paced technology and should only be purchased when required by an instructor. If you would like to purchase "both" the physical text and MyMathLab, search for: 9780134022697 / 0134022696 Linear Algebra and Its Applications plus New MyMathLab with Pearson eText -- Access Card Package, 5/e With traditional linear algebra texts, the course is relatively easy for students during the early stages as material is

presented in a familiar, concrete setting. However, when abstract concepts are introduced, students often hit a wall. Instructors seem to agree that certain concepts (such as linear independence, spanning, subspace, vector space, and linear transformations) are not easily understood and require time to assimilate. These concepts are fundamental to the study of linear algebra, so students' understanding of them is vital to mastering the subject. This text makes these concepts more accessible by introducing them early in a familiar, concrete "R<sup>n</sup>" setting, developing them gradually, and returning to them throughout the text so that when they are discussed in the abstract, students are readily able to understand.